

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>62071CT-657</b>	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. <b>PCT/JP2004/004487</b>	International filing date (day/month/year) <b>30.03.2004</b>	Priority date (day/month/year) <b>18.04.2003</b>
International Patent Classification (IPC) or national classification and IPC		
Applicant <b>SHIMA SEIKI MANUFACTURING LIMITED</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>7</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004487

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1, 4-10 as originally filed/furnished
- pages\* 2, 2/1, 3, 3/1, 11 received by this Authority on 17.02.2005
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 2-3, 5-6 as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1, 4 received by this Authority on 17.02.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets fig. 1-3 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004487

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-6	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-6	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

Document 1: JP 6-200453 A (Tsudakoma Corp.), 19 July 1994

Document 2: JP 2676182 B2 (Shimadzu Corp.), 12 November 1997

Document 3: JP 8-120548 A (Shimadzu Corp.), 14 May 1996

Claims 1 and 4

The inventions set forth in claims 1 and 4 do not involve an inventive step in the light of document 1.

Document 1 discloses a "method for controlling the tension in a flat knitting machine, said method being characterized by a technique for determining the level of deviation between the target yarn length, which is set in advance according to a knitting pattern, and the length of yarn that was actually consumed during the knitting process and then controlling the feed tension of the knitting yarn based on the level of deviation, wherein during the trial knitting process, the tension is set so as to optimize the stitch density and the texture of the actual knitted object that corresponds to a knitting pattern and then the corresponding optimally set tension value and reference yarn length as measured at that time are stored, whereafter during the actual knitting process, the target set tension and the target yarn

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Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

length are changed to the abovementioned optimum tension value and the abovementioned reference yarn length which correspond to the knitting pattern which is being used at that time."

Therein, document 1 does not make any specific disclosure in relation to the type of yarn that is used therein. However, the feature of knitting a knitted fabric from elastic fibers is well known; therefore, it would not be especially difficult to conceive of employing elastic fibers therein. In addition, it is apparent that if a trial knitting were to be carried out using elastic fibers, then it would be possible to determine the relationship between the knitting pattern and the set tension and/or the reference yarn length from the "finished state that is obtained as a result of the shape memory characteristics of the elastic yarn."

Furthermore, the specification of the knitting pattern in the invention that is disclosed in document 1 corresponds to the specification of the "finished state" in the inventions that are set forth in claims 1 and 4.

#### Claim 2

The invention set forth in claim 2 does not involve an inventive step in the light of document 1.

Document 1 presents the "difference between the knitting structures (i. e. a calico structure or a rib stitch structure), or, in cases when the knitting structure is the same, the difference in the magnitudes of the stitch densities, the differences between each of the courses" or the like as examples of the knitting patterns (the finished states). Therefore, document 1 discloses the technical feature of controlling the yarn

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tension and the yarn feed length according to the indicated stitch loop length, and can also be considered to recognize that the stitch loop length, the yarn tension and the yarn feed length are all parameters which are essential for knitting.

As a result, it would not be especially difficult to conceive of substituting a configuration in which the yarn feed length is controlled based on the indicated stitch loop length and yarn tension for the configuration in which the yarn tension and the yarn feed length are controlled based on the indicated stitch loop length.

#### Claim 3

The invention set forth in claim 3 does not involve an inventive step in the light of document 1 and document 2.

Document 2 discloses the technical feature of creating knitting control information based on the pattern data and a texture sample. Therefore, it would not be especially difficult to conceive of configuring the invention that is set forth in claim 3 by employing the technical feature in question in the invention that is disclosed in document 1.

#### Claim 5

The invention set forth in claim 5 does not involve an inventive step in the light of document 1.

Document 1 presents the "difference between the knitting structures (i. e. a calico structure or a rib stitch structure), or, in cases when the knitting structure is the same, the difference in the magnitudes of the stitch densities, the difference between each of

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the courses" or the like as examples of the knitting patterns (the finished states). Therefore, it cannot be considered to be especially difficult to conceive of employing texture data that "expresses the needle array density that would be necessary in order to knit a knitted fabric, which has a texture that with a stitch loop length similar to that of the finished state of the actual knitted fabric after knitting, from knitting yarn that is not an elastic yarn" in order to specify the finished state of the knitted object.

## Claim 6

The invention set forth in claim 6 does not involve an inventive step in the light of document 1 and document 3.

The technical feature of controlling the yarn length based on the reference data and the correction coefficient data is well known, as disclosed in document 3, for example; therefore, it would not be especially difficult to conceive of configuring the invention that is set forth in claim 6 by applying the technical feature in question to the invention that is disclosed in document 1.